DRAFT STATEMENT OF WORK FOR
THE GULFCO MARINE MAINTENANCE SUPERFUND SITE

FREEPORT, BRAZORIA COUNTY, TEXAS

9425397

STATEMENT OF WORK
GULFCO MARINE MAINTENANCE SUPERFUND SITE

I. **INTRODUCTION**

A. Purpose of the Statement of Work

This Statement of Work ("SOW") outlines the work to be performed by Principal Settling Defendants at the Gulfco Marine Maintenance Superfund Site in Freeport, Brazoria County, Texas (the "Site"). The work outlined is intended to fully implement the remedy for the entire Site as described in the Record of Decision ("ROD") for the Site, dated September 29, 2011, and to achieve the Performance Standards set forth in the ROD, Consent Decree, and this SOW. The requirements of this SOW will be further detailed in work plans and other documents to be submitted by the Principal Settling Defendants for approval as set forth in this SOW. It is not the intent of this document to provide task specific engineering or geological guidance; rather it provides the framework for performance of the work. The definitions set forth in Section IV of the Consent Decree shall also apply to this SOW unless expressly provided otherwise herein.

Principal Settling Defendants are responsible for performing the Work to implement the selected remedy. The U.S. Environmental Protection Agency ("EPA") shall conduct oversight of the Principal Settling Defendants' activities throughout the performance of the Work. The Principal Settling Defendants shall assist EPA in conducting oversight activities.

The EPA review or approval of a task or deliverable shall not be construed as a guarantee as to the adequacy of such task or deliverable. If EPA modifies a deliverable pursuant to Section XI of the Consent Decree, such deliverable as modified shall be deemed approved by EPA for purposes of this SOW. A summary of the major deliverables that Principal Settling Defendants shall submit for the Work is attached herein.

B. Site Description

The Site is located about three miles northeast of Freeport, Texas in Brazoria County at 906 Marlin Avenue. The Site consists of approximately 40 acres within the 100-year coastal floodplain along the north bank of the Intracoastal Waterway. Marlin Avenue divides the Site into two areas, north and south. The Site located north of Marlin Avenue consists of undeveloped land and closed surface impoundments, while the Site south of Marlin Avenue contains a former above-ground tank farm (the tanks have been removed), a dry dock, and two barge slips connected to the Intracoastal Waterway.

The Site, currently inactive, was a former barge cleaning and repair facility from 1971 to about 1998. As part of this operation, residual products were recovered from the barges, and the barges were cleaned of waste oils, caustics and organic chemicals. The barge repair

work included welding, sandblasting, and painting. Wash waters from barge cleaning were stored in three former earthen impoundments with natural clay liners north of Marlin Ave. The three impoundments were taken out of service in 1981 and closed in 1982. Closure was accomplished by removing liquids and excavation of the bottom sludge. Some of the bottom sludge, approximately 100 cubic yards, was difficult to excavate, however, and after being mixed with soil was left in the impoundments. Closure was completed by capping with three-feet of clay and a shell surface. Following closure of the impoundments, floating barges and above ground storage tanks were used to store the wash waters resulting from barge cleaning operations.

There are wetlands located on and north of the Site that are tidally connected to Oyster Creek and the Intracoastal Waterway. Adjacent property to the east of the south area is developed and currently used for industrial purposes while to the west the south area is currently vacant and previously served as a commercial marina. A residential community and marina is located just west of the former marina.

Following site inspections and sampling, the Site was placed on the Superfund National Priorities List effective May 30, 2003, in a final rulemaking published on April 30, 2003 (68 FR 23077).

II. OVERVIEW OF THE REMEDY

The Remedial Action Objectives ("RAOs") consist of medium-specific goals for protecting human health and the environment. The RAOs developed for the Site are:

- Prevent further migration of the volatile organic compound ("VOC") and semi-volatile organic compound ("SVOC") plumes in Zones A and B, both in terms of lateral extent and the absence of impacts above screening levels to underlying ground water bearing units.
- To prevent human exposure to VOCs in any future buildings at levels posing an unacceptable risk for commercial/industrial workers via the ground water to indoor air pathway.
- To prevent land use other than commercial or industrial.
- To prevent ground water use.
- To prevent potential future exposure to remaining waste material in the former surface impoundments.

III. REMEDY COMPONENTS

The remedy includes prevention of human exposure to site contaminants by: 1) Review and evaluation of current restrictive covenants prohibiting ground water use at the Site and requiring commercial/industrial land use at the Site and protection against indoor vapor intrusion for building construction on Lots 55, 56, and 57; 2) Modification of the

existing institutional controls ("ICs") to: address any issues identified with the current restrictive covenants after review; identify the type and location of hazardous substances; identify the location of the existing cap and restrict actions that might affect the integrity of the cap; and any other necessary modifications; 3) A cap over the former surface impoundments; 4) Annual ground water monitoring, and as a part of the Five-Year Reviews, to confirm stability of the affected ground water plume; and 5) Implementation of an Operation and Maintenance Plan to provide ground water monitoring and inspection/repair of the cap covering the former surface impoundments and the fence and signs.

During the Remedial Investigation, the cap was found to be between 2.5-feet and 3.6-feet thick, and was rutted on the western end. The objective for cap maintenance/repair is to protect the cap's integrity by reestablishing and maintaining the 3-foot minimum thickness of the clay cover, repairing any ruts, and providing adequate erosion protection over and drainage from the cap.

Cap repair is necessary to re-establish the 3-foot minimum thickness. Specifically, the cap repair shall include removing the existing vegetative cover and hard wearing surface, and reestablishing the 3-foot thickness of the clay cover with clay material from an off-site location that does not exceed a hydraulic conductivity of 1×10^{-7} cm/sec. The cap shall be sloped to provide adequate drainage, and provisions shall be included to provide erosion protection for the cap. The installation of a fence around the former impoundments, with appropriate warning signs, is required to protect cap integrity by preventing future access to the cap area.

A. Components

The major components of the remedy are described in the "Description of the Selected Remedy" section of the attached Record of Decision ("ROD") (Section 19.2).

B. Performance Standards

Principal Settling Defendants shall conduct remedial action as required until Principal Settling Defendants have demonstrated compliance with the Performance Standards, as that term is defined in the Consent Decree, and in accordance with the Construction Quality Assurance Plan ("CQAP") required by this SOW.

C. Compliance Testing

Principal Settling Defendants shall perform compliance testing to ensure that all Performance Standards are met. The treated materials shall be tested in accordance with the CQAP developed pursuant to this SOW. If testing of the treated materials indicates the Performance Standards consistently cannot be achieved, EPA may reevaluate the effectiveness of the source control component. The Principal Settling Defendants may seek approval from EPA for other means to properly manage any such material that does not

meet the Performance Standards.

After demonstration of compliance with Performance Standards, Principal Settling Defendants shall monitor the Site, including taking such actions as are necessary to maintain the cap, in accordance with the approved Operation and Maintenance Plan until hazardous substances remaining at the Site are below levels allowing for unlimited use and unrestricted exposure, as determined by EPA. Principal Settling Defendants also shall conduct groundwater monitoring in accordance with the approved Groundwater Monitoring Work Plan; EPA may modify the Groundwater Monitoring Work Plan if monitoring data support that the plumes are stable or shrinking such that there is no potential for off-site migration of chemicals of concern ("COCs") beyond the Site boundary.

IV. PLANNING AND DELIVERABLES

The specific scope of this work shall be documented by Principal Settling Defendants in a Remedial Design ("RD")/Remedial Action ("RA") Work Plan ("Work Plan"). The Work Plan will be prepared and submitted with Component Plans as described below. These documents will provide requirements for the work.

Principal Settling Defendants shall submit a technical memorandum documenting any need for additional data along with the proposed Data Quality Objectives ("DQOs") whenever such requirements are identified. Principal Settling Defendants are responsible for fulfilling additional data and analysis needs identified by EPA during the RD/RA process that are consistent with the scope and objectives of the Consent Decree, including this SOW.

The Project Manager for Settling Defendants shall communicate regularly (at least weekly during site activities) with the EPA Remedial Project Manager (RPM), either in face-to-face meetings or through conference calls. The Settling Defendants shall document all decisions that are made in meetings and conversations with EPA. The Settling Defendants shall forward this documentation to the RPM within two working days after the meeting or conversation.

The Settling Defendants shall prepare and send to the EPA RPM monthly status reports documenting the status of each task, beginning in the month following entry of the Consent Decree and ending with the month following issuance of the Certificate of Completion.

TASK I - PROJECT PLANNING

A. Site Background

Principal Settling Defendants shall gather and evaluate the existing information regarding the Site and shall conduct a visit to the Site with EPA to assist in planning the

RD/RA. Before planning RD/RA activities, all existing Site data shall be thoroughly reviewed by Principal Settling Defendants. Specifically, this shall include the ROD, RI/FS, and other available data related to the Site. This information shall be utilized in determining if additional data is needed for RD/RA implementation. Final decisions on the necessary data and DQOs shall be made by EPA.

B. Scoping Meeting

Once Principal Settling Defendants have evaluated existing data, the specific project scope shall be planned and discussed with EPA in a Scoping Meeting. The Scoping Meeting will be held at or near to the Site in order to incorporate a Site walk-through with EPA. The Scoping Meeting will include a description of the data gap(s), if any, the design element(s) the data will support, sampling and analytical requirements, and a description of how the data will be evaluated to support future design efforts.

C. Schedule

The project schedule will be presented in the schedule attached to this SOW and in the RD/RA Work Plan as described below. The initial milestones and the schedules for their submittal are:

Milestone	Schedule
Scoping Meeting	Within 45 days of Authorization to Proceed
Work Plan	Within 90 days of Scoping Meeting
Work Start	Within 30 days of EPA approval of the Work Plan, or within 30 days of the Effective Date, whichever is later

TASK II - REMEDIAL DESIGN AND REMEDIAL ACTION PLAN

The Settling Defendants shall conduct the RD/RA in accordance with this SOW and consistent with the ROD, the *Remedial Design/Remedial Action (RD/RA) Handbook* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER), 9355.0-04B, EPA 540/R-95/059, June 1995), and all other guidance used by EPA in conducting an RD/RA (Attachment 1). In all cases, the Settling Defendants shall use the most recently issued guidance.

The Remedial Design shall provide the technical details for implementation of the Remedial Actions in accordance with currently accepted environmental protection technologies and standard professional engineering and construction practices. The designs

shall include clear and comprehensive design plans and specifications for implementation of the Remedial Actions.

The Remedial Actions shall be performed by Principal Settling Defendants to implement the response actions selected in the ROD.

A. Remedial Design and Remedial Action Work Plan

Principal Settling Defendants shall submit a Work Plan and its Component Plans to EPA in accordance with the Consent Decree within 90 days after the Scoping Meeting. The associated components may be separate submittals and are listed in Task II.B below.

The Work Plan shall provide an overall plan of action for the safe and efficient completion of the Remedial Action activities. The Work Plan shall include a comprehensive description of the work to be performed. The Work Plan shall provide the technical details for implementation of the Remedial Action in accordance with currently accepted environmental protection technologies and standard professional engineering and construction practices. The design shall include clear ad comprehensive design plans and specifications.

The following items shall be submitted with or as part of the Work Plan:

1. Design Analyses

The selected design shall be presented along with an analysis supporting the design approach. Design calculations shall be included.

2. Plans and Specifications

A complete set of construction drawings and specifications shall be submitted which describe the selected design.

3. Construction Schedule

A construction schedule for construction and implementation of the relevant work that identifies timing for initiation and completion of all critical path tasks shall be prepared as part of the Work Plan. The schedule shall specifically identify target dates for completion of the subject tasks and major milestones.

4. Cost Estimate

A construction cost estimate shall be included in the Work Plan.

The Work Plan and associated components must be reviewed and approved by EPA, and the Health and Safety Plan reviewed and commented on by EPA, prior to the initiation of field activities. Upon approval of the Work Plan and its associated Component Plans, Principal Settling Defendants shall implement the Work Plan in accordance with the project schedule contained therein and in this SOW. Plans, specifications, submittals, and other deliverables shall be subject to EPA review and approval in accordance with Section XI of the Consent Decree. Review and/or approval of draft design submittals only allow Principal Settling Defendants to proceed to finalizing the design submittals. It does not imply acceptance of later design submittals that have not been reviewed, nor that the remedy, when constructed, will meet Performance Standards.

After EPA review and comment on the Draft Work Plan, the Final Work Plan shall be submitted along with a memorandum indicating how EPA's comments on the Draft Work Plan were incorporated into the final Work Plan. All Final Work Plan documents shall be certified by a Professional Engineer registered in the State of Texas. Written approval by EPA of the Final Work Plan is required before initiating the Remedial Action, unless otherwise specifically authorized by EPA.

Significant field changes to the Remedial Action as set forth in the Work Plan shall not be undertaken without the approval of EPA. The Remedial Action shall be documented in enough detail to produce as-built construction drawings after the Remedial Action is complete.

Specifically, the Work Plan shall present the following;

1. A statement of the problem(s) and potential problem(s) posed by the Site and the objectives of the RD/RA.

2. A background summary setting forth the following:

    a. A brief description of the Site including the geographic location and the physiographic, hydrologic, geologic, demographic, ecological and natural resource features;
    b. A brief synopsis of the history of the Site including a summary of past disposal practices and a description of previous responses that have been conducted by local, State, Federal, or private parties;
    c. A summary of the existing data including physical and chemical characteristics of the contaminants identified and their distribution among the environmental media at the Site.

3. A list and detailed description of the tasks to be performed, information needed for each task, information to be produced during and at the conclusion of each task, and a description of the work products that shall be submitted to EPA. This description shall include the deliverables set forth herein.

4. An overall schedule for the activities and deliverables required by the Consent Decree and this SOW and the procedure to be used for any schedule modifications.

B. Work Plan - Component Plans

The Work Plan shall be submitted with Component Plans including:

1. Health and Safety Plan
2. Air Monitoring Plan
3. Hurricane and Flooding Contingency Plan
4. Spill Control and Countermeasures Plan
5. Sampling and Analysis Plan
6. Quality Assurance Project Plan
7. Project Management Plan
8. Data Management Plan
9. Permitting Plan (if required)
10. Construction Management Plan
11. Construction Quality Assurance Plan

The Component Plans shall be used throughout the project. Additional descriptions for these plans are provided below.

1. Health and Safety Plan

A Health and Safety Plan shall be prepared in conformance with Principal Settling Defendants' health and safety program and in compliance with OSHA regulations and protocols. The Health and Safety Plan shall include a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and provisions for Site control. The EPA will not approve Principal Settling Defendants' Health and Safety Plan, but rather EPA will review it to ensure that all necessary elements are included, and that the plan provides for the protection of human health and the environment.

This plan shall include a Contingency Plan for the Site. The Contingency Plan is to be written for the onsite construction workers and the local affected population. It shall include the following items:

1. Name of person who will be responsible in the event of an emergency incident.
2. Plan for initial site safety indoctrination and training for all employees, name of the person who will give the training and the topics to be covered.
3. Plan and date for meeting with the local community, including local, state and federal agencies involved in the cleanup, as well as the local emergency squads and the local hospitals.

4. A list of the first aid and medical facilities, including location of first aid kits, names of personnel trained in first aid, a clearly marked map with the route to the nearest medical facility, all necessary emergency phone numbers conspicuously posted at the job site (i.e., fire, rescue, local hazardous material teams, National Emergency Response Team, etc.).
5. Plans for protection of public and visitors to the job site.

2. Air Monitoring Plan

The Air Monitoring Plan shall incorporate the following requirements:

1. Air monitoring shall be conducted on Site. The chemical constituents that were identified during the Risk Assessment shall serve as a basis of the sampling for and measurement of pollutants in the atmosphere. Principal Settling Defendants shall clearly identify which chemicals will be monitored and the detection and notification levels required in Paragraph 4 below. Air monitoring shall include personnel monitoring and on-site area monitoring.
2. Personnel monitoring shall be conducted according to OSHA and NIOSH regulations and guidance.
3. Onsite area monitoring shall consist of real-time monitoring performed immediately adjacent to any waste excavation areas, treatment areas, and any other applicable areas where work is occurring. Measurements shall be taken in the breathing zones of personnel and immediately upwind and downwind of the work areas. Equipment shall include the following, at a minimum: organic vapor meter, explosion meter, particulate monitoring equipment, and onsite windsock.
4. The air monitoring program shall include provisions for notifying any off-site potentially affected parties, including local, state, and federal agencies, in the event that unacceptable concentrations of airborne toxic constituents are migrating off-site. Principal Settling Defendants shall report detection of unacceptable levels of airborne contaminants to EPA in accordance with Section X of the Consent Decree.

3. Hurricane and Flooding Contingency Plan

The Principal Settling Defendants shall prepare a Hurricane and Flooding Contingency Plan (HFCP) to describe the potential issues associated with a hurricane or flooding at the Site and define in detail the efforts and work required at the Site to properly prepare for and implement response actions. Included in the HFCP shall be:

1. Descriptions of potential concerns resulting from a hurricane or severe flooding.
2. Notification requirements.
3. Equipment and material requirements associated with a response action.
4. A work plan for protection of the remedy and any work in progress and

prevention of migration of hazardous substances.
5. A description of activities associated with re-entry to the Site and resuming remedial efforts

4. Spill Control and Countermeasures Plan

The Principal Settling Defendants shall prepare a Spill Control and Countermeasures Plan which shall include the following:

1. Contingency measures for potential spills and discharges from materials handling and/or transportation.
2. A description of the methods, means, and facilities required to prevent contamination of soil, water, atmosphere, and uncontaminated structures, equipment, or material by spills or discharges.
3. A description of the equipment and personnel necessary to perform emergency measures required to contain any spillage and to remove spilled materials and soils or liquids that become contaminated due to spillage. This collected spill material must be properly disposed of.
4. A description of the equipment and personnel to perform decontamination measures that may be required for previously uncontaminated structures, equipment, or material

5. Sampling and Analysis Plan

As part of the Work Plan, Principal Settling Defendants shall prepare a Sampling and Analysis Plan ("SAP") to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data generated will meet the established DQOs. The SAP shall include a Field Sampling and Analysis Plan.

The SAP shall define in detail the sampling and data-gathering methods that shall be used on the project, including sampling of ground water and sampling of imported clay material required for cap repair to insure that it is uncontaminated. It shall include sampling objectives, sample location (horizontal and vertical) and frequency, sampling equipment and procedures, and sample handling and analysis. The SAP shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required.

The SAP shall include, at a minimum, collection of ground water samples from the following wells:

a. ND2MW01;
b. ND3MW02;
c. ND3MW29;

d. ND4MW03;
e. NE1MW04;
f. NE3MW05;
g. NF2MW06;
h. OMW20;
i. OMW21;
j. ND4MW24B;
k. NE3MW30B;
l. NE4MW31B;
m. NG3MW25B;
n. OMW27B; and
o. NE4MW32C

The SAP shall provide for analysis for the following chemicals in ground water:

a. 1,1,1-trichloroethane;
b. 1,1-dichloroethene;
c. 1,2,3-trichloropropane;
d. 1,2-dichloroethane;
e. benzene;
f. cis-1,2-dichloroethene;
g. methylene chloride;
h. tetrachloroethene;
i. trichloroethene;
j. vinyl chloride.

Should any perimeter well experience a statistically significant increase in ground water concentration (using a Mann-Kendall test or other method approved by EPA), then additional sampling shall be performed at the indicated location(s) with an increase within 60 days after the initial sample. Should a confirmed statistically significant increase be identified, then one or more additional monitoring wells downgradient from the affected well or wells shall be installed and sampled as part of an evaluation of plume expansion. The EPA may direct that additional monitoring wells and/or analysis be added to the SAP list after determining that such are necessary to meet the requirements of the ROD. The Respondents may propose a revision to the above list of monitoring wells and/or analysis for EPA review and approval.

6. Quality Assurance Project Plan ("QAPP")

The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control ("QA/QC") protocols that shall be used to achieve the desired DQOs. The DQOs shall, at a minimum, reflect use of analytical methods for obtaining data of sufficient quality to meet National Contingency Plan requirements as identified at 40 C.F.R. § 300.435(b). In addition, the QAPP shall address personnel qualifications, sampling procedures, sample custody, analytical procedures, and data reduction, validation, and reporting. These procedures must be consistent with the Region 6 Environmental Investigation Standard Operating Procedures and Quality Assurance Manual and the guidance specified in Section VIII of the Consent

Decree.

Principal Settling Defendants shall demonstrate in advance and to EPA's satisfaction that each laboratory it may use is qualified to conduct the proposed work and meets the requirements specified in Section VIII of the Consent Decree. The EPA may require that Principal Settling Defendants submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specification, and laboratory analyses of performance samples (blank and/or spike samples). In addition, EPA may require submittal of data packages equivalent to those generated by the EPA Contract Laboratory Program ("CLP").

7. Project Management Plan

Principal Settling Defendants shall submit a project management plan that outlines the strategy for delivering the project. The plan shall address the management approach for implementing the Remedial Action, including procurement methods and contracting strategy, phasing alternatives, and contractor and equipment availability concerns, if any. The plan is expected to include provisions for monthly reports to EPA in accordance with the CD and meetings and presentations to EPA.

8. Data Management Plan

The data management plan shall address the requirements for project management systems, including tracking, sorting, and retrieving the data along with an identification of the software to be used, minimum data requirements, data format and backup data management. The plan shall address both data management and document control for all activities conducted during the RDIRA.

9. Permitting Plan (if determined by EPA to be applicable for the Site)

All activities must be performed in accordance with the requirements of all applicable federal and state laws and regulations. Any off-site disposal shall be in compliance with the policies stated in the Procedure for Planning and Implementing Off-site Response Actions (Federal Register, Volume 50, Number 214, November, 1985, pages 45933-45937) and the National Contingency Plan, Section 300.440. The plan shall identify the off-site disposal permits that are anticipated, the time required to process the permit applications, and a schedule for submittal of the permit applications.

10. Construction Management Plan

A Construction Management Plan shall be developed to indicate how the construction activities are to be implemented and coordinated with EPA during the Remedial Action. Principal Settling Defendants shall designate a person to be a Remedial Action

Coordinator and its representative on-site during all phases of the Remedial Action and identify this person in the Plan. This Plan shall also identify other key project management personnel and lines of authority, and provide descriptions of the duties of the key personnel along with an organizational chart. In addition, a plan for the administration of construction changes and EPA review and approval of those changes shall be included.

11. Construction Quality Assurance Plan ("CQAP")

Principal Settling Defendants shall develop and implement a Construction Quality Assurance Plan to ensure, with a reasonable degree of certainty, that the completed Remedial Action meets or exceeds all design criteria, plans and specifications, and Performance Standards. The Construction Quality Assurance Plan will include Performance Standards as set forth in the Record of Decision and as developed and approved by EPA during the remedial work, and the methods which shall be used to verify that the Performance Standards have been met.

At a minimum, the Construction Quality Assurance Plan shall include the following elements:

1. A description of the quality control organization, including a chart showing lines of authority and identifying the members of the Independent Quality Assurance Team ("IQAT"), and acknowledgment that the IQAT will implement the control system for all aspects of the work specified and shall provide all reports to both the Principal Settling Defendants' Project Coordinator and EPA. The IQAT members shall be representatives from testing and inspection organizations and/or the Supervising Contractor and shall be responsible for the QA/QC of the Remedial Action. The members of the IQAT shall have a good professional and ethical reputation, previous experience in the type of QA/QC activities to be implemented and demonstrated capability to perform the required activities. They shall also be independent of the construction contractor.

2. The name, qualifications, duties, authorities, and responsibilities of each person assigned a QC function.

3. Description of the observations and control testing that will be used to monitor the construction and/or installation of the components of the Remedial Action. This includes information which certifies that personnel and laboratories performing the tests are qualified and the equipment and procedures to be used comply with applicable standards. Any laboratories to be used shall be specified. Acceptance/Rejection criteria and plans for implementing corrective measures shall be addressed.

4. A schedule for managing submittals, testing, inspections, and any other QA

function (including those of contractors, subcontractors, fabricators, suppliers, purchasing agents, etc.) that involve assuring quality workmanship, verifying compliance with the plans and specifications, or any other QC objectives. Inspections shall verify compliance with all environmental requirements and include, but not be limited to, air quality and emissions monitoring records and waste disposal records, etc.

5. Reporting procedures and reporting format for QA/QC activities including such items as daily summary reports, schedule of data submissions, inspection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation.

6. A list of definable features of the work to be performed. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements.

7. The CQAP shall provide a mechanism to ensure that both short-term and long-term Performance Standards for the Remedial Action are met. Guidance used in developing the Sampling and Analysis Plan during the Remedial Design phase shall be used. The CQAP shall include:

    1) The CQAP shall provide guidance for all construction related fieldwork by defining in detail the sampling and data gathering methods to be used. The CQAP, in conjunction with the Sampling and Analysis Plan, shall be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required.
    2) The CQAP shall describe the quality assurance and quality control protocols which will be followed in demonstrating compliance with Performance Standards.
    3) Specification of those tasks to be performed by Principal Settling Defendants to demonstrate compliance with the Performance Standards and a schedule for the performance of these tasks.

TASK III - REMEDIAL ACTION

Following submittal and EPA approval of the Work Plan and its Component Plans, the remedial action work will be initiated. Principal Settling Defendants shall submit schedule and any other proposed changes to EPA for approval.

Following EPA approval of the Work Plan, a Preconstruction Conference shall be held before initiation of construction. This conference shall include Principal Settling Defendants, Supervising Contractor, and federal, state and local government agencies and shall:

1. Define the roles, relationships, and responsibilities of all parties;
2. Review methods for documenting and reporting inspection data;
3. Review methods for distributing and storing documents and reports;
4. Review work area security and safety protocols;
5. Review the Construction Schedule;
6. Conduct a site reconnaissance to verify that the design criteria and the plans specifications are understood and to review material and equipment storage locations.

The Preconstruction Conference must be documented, including names of people in attendance, issues discussed, clarifications made, special instructions issued, etc.

TASK IV - CONSTRUCTION COMPLETION

Following completion of all construction activities, the Principal Settling Defendants shall notify EPA and complete the following work.

A. Pre-final Construction Inspection

Upon preliminary completion of construction, the Principal Settling Defendants shall notify EPA for the purpose of conducting a Pre-final Construction Inspection. Participants should include the Project Coordinators, Supervising Contractor, Construction Contractor, Natural Resource Trustees, and other federal, state, and local agencies with a jurisdictional interest. The Pre-final Inspection shall consist of a walk-through inspection of the entire project Site. The objective of the inspection is to determine whether the construction of the phase is complete and consistent with the Consent Decree. Any outstanding construction items discovered during the inspection shall be identified and noted on a punch list. A Pre-final Construction Inspection Report shall be submitted by Principal Settling Defendants which outlines the outstanding construction items, actions required to resolve the items, completion date for the items, and an anticipated date for the Final Inspection for that phase.

B. Final Construction Inspection

Upon completion of all outstanding construction items, Principal Settling Defendants shall notify EPA for the purpose of conducting a Final Construction Inspection, if needed. The Final Construction Inspection shall consist of a walk-through inspection of the entire project Site. The Pre-final Construction Inspection Report shall be used as a check list with the Final Construction Inspection focusing on the outstanding construction items identified in the Pre-final Construction Inspection. Confirmation shall be made during the Final Construction Inspection that all outstanding items have been resolved. Any outstanding construction items discovered during the inspection still requiring correction shall be identified and noted on a punch list. If any items are still unresolved, the inspection shall be considered to be a Pre-final Construction Inspection requiring another Pre-final Construction Inspection Report and subsequent Final Construction Inspection.

C. Final Construction Report

The draft Final Construction Report will be prepared within 30 days following the conclusion of the Final Construction Inspection. The EPA will review the draft report and will provide comments to Principal Settling Defendants. The Final Construction Report shall include the following:

1. Brief description of how outstanding items noted in the Pre-final Inspection were resolved;
2. Explanation of modifications made during the Remedial Action to the original Work Plan and why these changes were made;
3. As-built drawings;
4. Synopsis of the construction work defined in the SOW and certification that the construction work has been completed.

D. Remedial Action Report

As provided in Section XIV of the Consent Decree, within 30 days after Principal Settling Defendants conclude that the Remedial Action has been fully performed and the Performance Standards have been attained, the Principal Settling Defendants shall submit a Remedial Action Report to EPA in accordance with Section XIV of the Consent Decree. The Remedial Action Report shall include the following:

1. Synopsis of the work defined in this SOW and a demonstration in accordance with the Construction Quality Assurance Plan that Performance Standards have been achieved;
2. Certification that the Remedial Action has been completed in full satisfaction of the requirements of the Consent Decree; and

3. A description of how Principal Settling Defendants will implement any remaining part of the EPA approved Operation and Maintenance Plan.

After EPA review, Principal Settling Defendants shall address any comments and submit a revised report. As provided in Section XIV of the Consent Decree, the Remedial Action shall not be considered complete until EPA approves the RA Report.

TASK V - OPERATION, MAINTENANCE, AND MONITORING

Operation, Maintenance, and Monitoring ("O&M") shall be performed in accordance with the approved Operation and Maintenance Plan.

As part of the submission of the Work Plan, Principal Settling Defendants shall submit an Operation and Maintenance Plan for review. The Operation and Maintenance

Plan must be reviewed and approved by EPA prior to initiation of Operation and Maintenance activities. If necessary, the Operation and Maintenance Plan shall be modified to incorporate any design modifications implemented during the Remedial Action. The Operation and Maintenance Plan shall include all necessary O&M information for the operating personnel.

Upon approval of the Operation and Maintenance Plan, Principal Settling Defendants shall implement the Operation and Maintenance Plan in accordance with the schedule contained therein. This plan shall describe inspections, procedures, training, and evaluation activities that shall be carried out by Principal Settling Defendants. The plan shall address the following elements:

1. Description of normal operation and maintenance;

    a. Description of tasks required for remedy inspections;
    b. Description of tasks required for remedy maintenance;
    c. Description of tasks required for remedy monitoring; and
    d. Schedule showing the required frequency for each O&M task.

2. Description of potential O&M problems;

    a. Description and analysis of potential O&M problems;
    b. Sources of information regarding problems; and
    c. Common remedies or anticipated corrective actions.

3. Description of routine monitoring and laboratory testing;

    a. Description of monitoring tasks;
    b. Description of required laboratory tests and their interpretation;
    c. Required QA/QC; and·
    d. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

4. Safety Plan;

    a. Description of precautions to be taken and required health and safety equipment, etc., for site personnel protection; and
    b. Safety tasks required in the event of systems failure.

5. Description of equipment;

    a. Equipment identification and technical specifications governing the monitoring systems;
    b. Installation of monitoring components;

c. Maintenance of site equipment; and
d. Replacement schedule for equipment and installation components.

6. Records and reporting;

a. O&M logs;
b. Laboratory records;
c. Records of O&M cost;
d. Mechanism for reporting emergencies;
e. Personnel and Maintenance Records; and
f. Reports to State/Federal Agencies

Gulfco Marine Maintenance Superfund Site
SOW Attachment 1
Regulations and Guidance Documents

The following list, although not comprehensive, consists of many of the regulations and guidance documents that apply to the RD/RA process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. ARCS Construction Contract Modification Procedures, September 1989, OERR Directive 9355.5-01/FS.
3. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
4. Community Relations in Superfund - A Handbook, U.S. EPA, Office of Emergency and Remedial Response, January 1992, OSWER Directive No. 9230.0-3C.
5. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
6. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
7. Contractor Requirements for the Control and Security of RCRA Confidential Business Information, March 1984.
8. Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
9. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
10. EPA NEIC Policies and Procedures Manual, EPA-330/9-78-001-R, May 1978, revised November 1984.
11. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
12. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final, U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive NO. 9355.3-01.
13. Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.
14. Guidance on Expediting Remedial Design and Remedial Actions, EPA/540/G-90/006, August 1990.
15. Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites, U.S. EPA Office of Emergency and Remedial Response (DRAFT), OSWER Directive No.

9283.1-2.
16. Guide for Conducting Treatability Studies Under CERCLA, U.S. EPA, Office of Emergency and Remedial Response, Prepublication version.
17. Guide to Management of Investigation-Derived Wastes, U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9345.3-03FS, January 1992.
18. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
19. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
20. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
21. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
22. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground Water (Jul 1992).
23. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
24. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
25. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
26. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
27. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
28. Procedures for Completion and Deletion of NPL Sites, U.S. EPA, Office of Emergency and Remedial Response, April 1989, OSWER Directive No. 9320.2-3A.
29. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
30. Remedial Design and Remedial Action Handbook, U.S. EPA, Office of Emergency and Remedial Response, June 1995, OSWER Directive No. 9355.5-22.
31. Revision of Policy Regarding Superfund Project Assignments, OSWER Directive No. 9242.3-08, December 10, 1991. [Guidance, p. 2-2]
32. Scoping the Remedial Design (Fact Sheet), February 1995, OSWER Publ. 9355-5-21 FS.
33. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
34. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.

35. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
36. Structure and Components of 5-Year Reviews, OSWER Directive No. 9355.7-02, May 23, 1991. [Guidance, p. 3-5]
37. Superfund Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, April 1990, EPA/540/G-90/001.
38. Superfund Remedial Design and Remedial Action Guidance, U.S. EPA, Office of Emergency and Remedial Response, June 1986, OSWER Directive No. 9355.0-4A.
39. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
40. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
41. Treatability Studies Under CERCLA, Final. U.S. EPA, Office of Solid Waste and Emergency Response, EPA/540/R-92/071a, October 1992.
42. USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, U.S. EPA, Office of Emergency and Remedial Response, July 1988.
43. USEPA Contract Laboratory Program Statement of Work for Organic Analysis, U.S. EPA, Office of Emergency and Remedial Response, February 1988.
44. User's Guide to the EPA Contract Laboratory Program, U.S. EPA, Sample Management Office, August 1982.
45. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.
46. Guide to Documenting Cost and Performance for Remediation Projects, Publication EPA-542-B-95-002, March 1995.